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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,883	10/25/2003	Jason M. Chilcote	H0004596	1908
7590 03/07/2006				
Kris T. Fredrick Honeywell International, Inc. 101 Columbia Rd. P.O. Box 2245 Morristown, NJ 07962		EXAMINER WHITTINGTON, KENNETH		
		ART UNIT 2862 PAPER NUMBER		

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/692,883	Applicant(s) CHILCOTE ET AL.	
	Examiner Kenneth J. Whittington	Art Unit 2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-16 and 18-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-16 and 18-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.


Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.


Bot Ledynek
Primary Examiner

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

The Amendment filed February 2, 2006 has been entered and considered.

5 ***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-4, 6-16 and 18-20 are rejected under 35
10 U.S.C. 102(b) as being anticipated by Bosch (DE3420709).
Regarding these claims, Bosch discloses a magnetic sensor comprising a permalloy runner having an anisotropic shape and locatable relative to a target (See Bosch FIGS. 1-3, item 15), and a single coil structure tightly wound about the
15 ferromagnetic runner (See FIGS. 1-3, item 14), the coil comprising a plurality of interconnecting metals for integrating the runner the coil with an interfacing circuit (See FIGS. 2 and 3), further comprising a conductive semi-conductive layer beneath the runner and an insulated metal to integrate the
20 runner and coil (See FIGS. 2 and 3).

It is noted that the remaining portions of claims 1, 2, 8, 10, 11, 12, 13, 14, 19 and 20 are directed to properties of the above noted structure, i.e., a coil wound about a permalloy

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core. For example, the feature that "when a magnetic field changes direction along an axial length of the runner, voltage is induced in the coil proportional to a time change of the magnetic flux thereof." This is simply based upon Faraday's Law

5 which states that

$$\text{Emf} = V = -[\{\text{change in flux}\}/\{\text{change in time}\}],$$

when the area to which the magnetic field is applied is constant:

$$V = -\text{Area} * [\{\text{magnetic field change}\}/\{\text{change in time}\}]$$

10 and for an inductor with N number of turns, this equation becomes

$$V = -N * \text{Area} * [\{\text{magnetic field change}\}/\{\text{change in time}\}].$$

Regarding the recited features of "producing a sudden change in a magnetization vector thereof to create a large time rate of change of magnetic flux density and enable sensing operations by said magnetic sensor"; "producing a voltage spike amplitude for an interfacing circuit induced therein when said magnetic field changes direction along said axial length of said ferromagnetic runner"; and wherein "said magnetic sensor is highly sensitive and operates upon a negligible electrical current", it is noted that these features are merely properties of a sensor comprising a coil surrounding a permalloy core as

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described by Applicant in the specification (See specifically paragraphs 0026-0029).

Because Bosch discloses the structures described and claimed by applicant in the specification and claims, the apparatus of Bosch also has the properties of the structures, and therefor Bosch anticipates the claimed invention.

Response to Arguments

Applicant's arguments filed February 2, 2006 have been fully considered. Because the rejections over Ramsden and Ramsden in view of Dezuari et al. have been withdrawn, those arguments related thereto are now moot.

With respect to the rejection of the claims over Bosch, the arguments are not persuasive and the rejections stand. Applicant has outlined several arguments regarding the application of Bosch. Each will be taken in turn. Because Applicant has attacked the Bosch reference and attempted to translate it, a copy of a professional translation is supplied herewith.

1. Rejection of Claims 1, 10 and 13

Applicant first attempts to distinguish Bosch because Bosch does not use the term ferromagnetic runner. While certainly a word search in English or German of the Bosch reference would

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not yield the term "runner", the ferromagnetic core (See Bosch FIG. 1, item 15) reads on the runner as outlined in the claims and even as described in the specification. Simply because Applicant has chosen to rename a well-known term in the art does
5 not provide a basis for distinguishing a reference.

Applicant next asserts that Bosch does not disclose a runner having shape anisotropy. The only place Applicant has provided any guidance on the phrase "shape anisotropy" is at paragraph 0025 of the present specification which states that
10 the configuration in FIGS. 1-3 utilizes only one coil and only one core "based on the shape anisotropy of the ferromagnetic cell." Applicant has not provided any description beyond this phrase and further has not provided any guidance on how simply providing a single core and coil structure will not have shape
15 anisotropy. As discussed above, Bosch disclose a permalloy core and a coil therearound, and accordingly, will utilize the shape anisotropy of the core. Thus, the core (runner) of Bosch will have "shape anisotropy".

Applicant next asserts that Bosch does not disclose a
20 target as recited in claims 1 and 10. However, Bosch is concerned with measuring a magnetic field, which must originate with some object or target and accordingly meets this feature of the claim. Furthermore, Bosch notes at the final paragraph on

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page 9, that the sensor can be used to either measure the Earth's magnetic field or used to determine the position of a sensor with respect to a magnet.

Applicant next asserts that Bosch does not disclose a
5 voltage in the coil and various other properties related thereto, such as a sudden in change in the magnetic vector and creating a large time rate of change of flux density. However, it is noted that claim 1 positively recites a ferromagnetic runner and a coil wound thereon. The remaining text of claim 1
10 following the phrase "such that" is written in terms of the property of the coil/runner interface. These properties are outlined in Applicant's specification at paragraphs 0026-0029. Because Bosch discloses a coil/core (coil/runner) having the same structural features as the claimed invention, it would
15 likewise have the same properties as outlined by Applicant. Simply because Bosch does not discuss the properties in the detail as contained in Applicant's claims does not mean they are not inherently there.

Applicant then asserts that the prior art reference
20 utilized must disclose each and every limitation of the rejected claim. However, this is incorrect. The reference must disclose, either explicitly or inherently, each and every feature. Because Bosch discloses the same structural features

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and would operate on the same basis, Bosch explicitly discloses the structural features of claims 1, 10 and 13 and inherently discloses the properties of the structures recited in claims 1, 10 and 13.

5 **2. Remaining Claims**

Applicant then reprints the text of each of the remaining claims and makes a generic query of where Bosch discloses the features therein. As discussed in the rejection noted above Bosch discloses, either explicitly or inherently, each and every
10 feature of the claimed invention. Applicant is directed to review the provided translation in view of the claimed invention.

Regarding Applicant's queries of specific features not disclosed in Bosch, Applicant is advised as follows.

15 First, Applicant queries "tightly wound". Applicant illustrates "tightly wound" in the specification at paragraph 0024 and in FIG. 3. However, Applicant has not provided any basis as to how tight is tightly wound. Accordingly, the broadest reasonable interpretation will be used for this
20 feature. Because Bosch discloses a similar arrangement as shown and describe by Applicant, Bosch discloses tightly wound in the manner described by Applicant.

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Regarding Applicant's query for the "interfacing circuit", it is noted that Applicant describes the interfacing circuit in the specification at paragraph 0023 as an integration of the coil and runner. Because Bosch discloses an integrated coil and
5 core, it likewise discloses an interfacing circuit. Again, simply because Applicant has chosen to create a new term for features well known in the art does not provide a basis for distinction.

Regarding Applicant's query for the "magneto-resistive
10 material", it is noted that Bosch discloses the core being made of permalloy (See FIGS. 1-3, item 15), which is a magneto-resistive material.

Regarding Applicant's query regarding the structure having a "number of turns, which is sufficient to achieve a voltage
15 spike amplitude", Applicant has not provided any guidance or limits on what is this "number" or what is the "amplitude". Regardless, Bosch discloses a core with a coil having a "number" of coils therearound as recited in the claim and as described in Applicants specification and accordingly would likewise achieve
20 a voltage spike in a similar manner.

Regarding Applicant's query regarding the sensor being "highly sensitive" and operating on a "negligible current", it is again noted that since Bosch discloses the same structure

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recited in the claims and described in Applicant's specification, it would likewise operate in the same manner.

In summary, Bosch discloses all of the structure features of the claimed invention. Because Bosch has the same structural features of Applicant's invention as outlined in the specification and operates in a similar manner, it would have the same properties. Thus, Bosch likewise discloses all of the properties of the claimed invention, including those specifically recited. Accordingly, Bosch anticipates the claimed invention.

3. Remarks Regarding Inventive Features

At the end of the Remarks o portion of the Amendment (Section IV), Applicant provides an explanation of the unique features of the intended invention. Applicant goes into great detail of additional properties of the invention related to frequency and fast/slow changes in magnetism. However, such properties are, as Applicant has pointed out in the last paragraph of this section, made possible with the use of a permalloy runner with a coil therearound. Because Bosch discloses a permalloy runner with a coil therearound, Bosch would likewise have the same properties.

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Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action
5 is set to expire THREE MONTHS from the mailing date of this
action. In the event a first reply is filed within TWO MONTHS
of the mailing date of this final action and the advisory action
is not mailed until after the end of the THREE-MONTH shortened
statutory period, then the shortened statutory period will
10 expire on the date the advisory action is mailed, and any
extension fee pursuant to 37 CFR 1.136(a) will be calculated
from the mailing date of the advisory action. In no event,
however, will the statutory period for reply expire later than
SIX MONTHS from the mailing date of this final action.

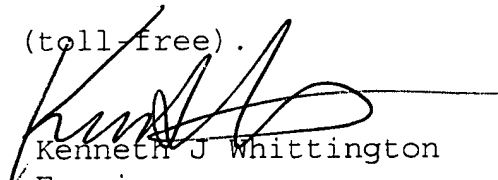
15 Any inquiry concerning this communication or earlier
communications from the examiner should be directed to Kenneth
J. Whittington whose telephone number is (571) 272-2264. The
examiner can normally be reached on Monday-Friday, 7:30am-
4:00pm.

20 If attempts to reach the examiner by telephone are
unsuccessful, the examiner's supervisor, Edward Lefkowitz can be
reached on (571) 272-2180. The fax phone number for the

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organization where this application or proceeding is assigned is
571-273-8300.

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obtained from the Patent Application Information Retrieval
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10 access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free).


Kenneth J Whittington
Examiner
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kjw